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ABSTRACT

This guide was developed to assist teachers and media staff in Winnipeg, Manitoba to work together to plan programs that help students develop independent, resource-based learning skills. The first section of the guide describes how library research projects can be used to teach independent learning skills. The guide discusses opportunities for promoting active student involvement in research projects; developing higher level thinking skills; using group discussion skills in problem-solving; and evaluating projects. The second section is a skills checklist designed to aid in lesson planning. The checklist breaks resource-based learning skills down into four categories: (1) locational skills--physically finding resources and the information in those resources; (2) analytical skills--analyzing the topic to be researched, developing a research plan, analyzing resources for their appropriateness, and analyzing the value of information in relation to topic and purpose; (3) comprehension skills--understanding the information, considering the information in relation to the topic, extracting pertinent information, organizing information, seeing relationships, making inferences, and drawing conclusions; and (4) recording, reporting, and demonstration skills--used to share information with others. The checklist is designed for use by teachers to decide which specific skills in the four areas should be introduced, reinforced, or extended at a given time in the process of leading students into the research process. (Contains 4 references.) (KRN)

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INDEPENDENT LEARNING SKILLS

VOLUME 1 :

SCOPE AND SEQUENCE

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The Winnipeg School Division No. 1
Teachers Library & Resource Centre

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Teachers Library & Resource Centre

Our thanks and appreciation to the following teacher librarians who are members of the Independent Learning Skills Committee:

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Alice Moulton	- Cecil Rhodes School
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INTRODUCTION

This Independent Learning Skills Scope and Sequence document has been developed to assist teachers and teacher librarians in identifying information skills that are a priority for the students in their school. The guide is descriptive, not prescriptive, as it presents a wide range of possible independent learning skills. The skills are organized into four categories based on the steps in the research process:

1. Locational skills - physically finding resources and the information in those resources.

2. Analytical skills - analyzing the topic to be researched, developing a research plan, analyzing resources for appropriateness and applicability to topic, analyzing value of information in relation to topic and purpose.

3. Comprehension skills - understanding the information, considering the information in relation to the topic, extracting pertinent information, organizing information, seeing relationships, making inferences, drawing conclusions.

4. Recording, reporting, demonstration skills - recording and sharing information.

Because skill development is cumulative and depends upon students' experience and ability level, no attempt has been made to specify either grade level or sequencing of learnings.

It is expected that users will select the specific skills for a particular unit of study as appropriate to:

- the age, grade and prior experience of the students
- the type of material being used
- the format of the final product

An independent learning skills program at any grade level will consist of a series of units with each unit reinforcing previous learnings while developing a new skill or skills.

A cooperatively developed school plan for independent learning skills will encourage consistency at each grade level as well as the sequential development of skills from grade to grade.

STRATEGIES FOR HELPING STUDENTS BECOME INDEPENDENT LEARNERS

INDEPENDENT LEARNING SKILLS

Independent learning skills are the skills a person needs to be information literate - able to identify when information is needed and able to locate, evaluate and use information. In Independent Learning Skills, Volume 1: Scope and Sequence the skills have been organized under four headings corresponding to the stages in an inquiry process:

- Locational skills
- Analytical skills
- Comprehension skills
- Reporting, recording, demonstration skills

Research projects provide an opportunity to:

- teach independent learning skills in a meaningful context
- involve students actively in the learning process
- develop students' skills in
  - higher level thinking
  - media literacy
  - group discussion
  - self evaluation

When students are given the opportunity to do research projects they do not automatically develop the necessary skills. The strategies needed to become effective life-long independent learners must be taught.

Skills such as scanning, skimming, notetaking or outlining can be learned through demonstration and practice. Skills in seeing relationships among facts, in identifying bias, stereotyping, assumptions, emotional appeal, etc. can be developed through planned listening, viewing and reading activities followed by discussion. When the skill teaching is done just prior to students embarking on research it meets two criteria for effective learning:

- a real need for learning the skill
- an immediate opportuntity to practice the skill

Any research project that does not include a skill-teaching component is a "missed opportunity". This basic principle applies from Kindergarten to Grade 12.

Research does not necessarily require reading or writing skills. It does require an inquiring mind-set. Picture a kindergarten class where the students have been enjoying stories with the pattern of three. The teacher has told the story The Three Bears. The children are excited about the idea of making child-size story characters by drawing around their own bodies. However, in discussion, they find they have a problem. They're not sure what bears look like. What shape are a bear's ears? ... legs? ... paws? How long is a bear's snout? ... tail? What color is a bear? On a visit to the school library the children examine many pictures of bears to find the answers to their questions. This activitiy can be planned by the classroom teacher and the teacher librarian to develop the following search strategy concepts:

- You can get information from pictures.
- The library has many pictures of bears in different media formats.
- You may have to consult more than one source to get all the information you need. (For example, a frontal view of a bear will not give information about its tail.)
- The information in all sources may not always agree. (The teacher librarian included pictures of black, brown and white bears).
- Drawing a picture is one way of recording what you have learned.

This focus on skill development should continue through the high school level. Each research project should be planned for the development of new skills and for the application of previously learned skills to more complex material or more controversial issues or problems.

However, it is not enough to teach independent learning skills and provide for the practice of these skills in the meaningful context of a research unit. To help improve their performance students need feedback on their level of skill attainment. For example, one way to evaluate students' notetaking skills is to have their notes handed in for diagnosis of specific strengths and weaknesses.

ACTIVE STUDENT INVOLVEMENT

The general aim at every grade level should be to move from teacher/teacher librarian directed activities to those that are more student directed. For example teacher-assigned topics can be expanded through group brainstorming, classifying and categorizing of questions. Other areas where group or individual decision-making can be built into a research unit include:

- planning of a search strategy
- division of tasks within a group
- selection of materials
- analysis and organization of information
- selection of media formats for reporting
- evaluation of individual and group work

At the most advanced level students, individually or with peers, would be responsible for making the decisions at every stage in the research process, from selecting a topic and developing a research plan to establishing criteria for peer and self evaluation. The teacher and teacher librarian, using pre-established evaluation criteria, would monitor the students' performance at specified stages in the process, providing guidance and and instruction as needed.

HIGHER LEVEL THINKING SKILLS

Frequently student researchers are involved in mere fact-finding exercises rather than true inquiry. Good research projects are stated as questions, not topics. They require students to probe, make choices or address a problem or issue. Consider the difference in level of thinking required by topic versus question in the following examples:

TOPIC: Selkirk settlers
QUESTION: How did the arrival of the Selkirk settlers affect the lives of the people already living in the Red River area?

TOPIC: Feudal society
QUESTION: What major changes distinguished the feudal society from earlier societies?

TOPIC: World landforms
QUESTION: What is the relationship between the world pattern of landforms and the world pattern of population distribution?

TOPIC: Multiculturalism
QUESTION: What are the advantages and disadvantages of a multicultural society?[2]

The topics give the students little focus. They set the stage for the copying of information without a clear purpose in mind. The questions, on the other hand, require the students to analyze, compare, classify, perceive relationships, infer, hypothesize, evaluate, etc. The students must decide what information they will need in order to answer a question. This will involve the brainstorming of supplementary questions. Facts will need to be gathered but now the search will have a purpose and direction. In addition, the information gathered will be USED. To answer a question or solve a problem facts will need to be examined, relationships considered and conclusions drawn.

MEDIA LITERACY SKILLS

Research projects should be organized to encourage students to seek information from a variety of sources, both inside and outside the school - books, newspapers, magazines, audio visual materials, artifacts, realia, computer data bases, individuals and institutions.

The end result of the research process should be the sharing of one's information and conclusions with others through speaking, writing or using the visual and aural arts. This basic principle applies from Kindergarten to Grade 12. For example, at the secondary level, research paper findings should be shared in some way, not just handed in to the teacher for marking.

The decision regarding the format of a presentation should involve consideration of reporting techniques most appropriate for the message. Students, therefore, need to be aware of the variety of oral, written and audio visual reporting modes that are available. Skill instruction should include, as needed, training in media literacy and media production.

GROUP DISCUSSION SKILLS

Research projects provide a ready-made opportunity to integrate cooperative learning strategies. Using the Sharans' group investigation model[3] students are organized into research groups which discuss and decide:

- what they need to investigate to solve their problem
- what resources they require
- who will do what
- how they will present their information to the class.

The actual research is done individually or in pairs with group members coming together to share their information: discussing, clarifying, evaluating and synthesizing ideas to decide on their conclusions and message.

The pre-teaching and practice of group discussion skills is needed in order for cooperative groups to work together effectively in completing their task. Those skills include strategies such an initiating, opinion seeking, opinion giving, active listening, paraphrasing, consensus testing, encouraging, harmonizing, compromising, etc.

EVALUATION SKILLS

Both self evaluation and the ability to offer constructive criticism are life skills. Every research project should involve students in the evaluation process. Using the group investigation model, described above, students' presentations to the class are evaluated by their audience using previously established criteria. Students should also participate with the teacher and teacher librarian in the evaluation of their own performance and product as well as the effectiveness of their group interactions.

COOPERATIVE PLANNING AND TEACHING

Classroom teachers and teacher librarians share the responsibility for helping students develop independent learning skills through resource-based learning. Collaboration in the planning, implementation and evaluation of research units helps ensure:

- adequate materials will be available
- independent learning skills instruction will be integrated into every subject area
- more individualized guidance is available for students

An additional advantage of collaboration is the sharing of teaching tasks with another adult. Components of the unit to be considered at the planning stage can include:

- the teacher's aim and specific objectives for the unit
- materials appropriate to the objectives
- independent learning skills students will need to use to complete the project
- skills which must be taught, reviewed or reinforced
- techniques for helping students to define their topic and develop efficient research strategies
- preparation of study or research guides
- evaluation procedures to assess
    - learning outcomes
    - level of skill development
    - effectiveness of the unit design.[4]

Advance planning can ensure that both library space and the teacher librarian's time can be booked at appropriate intervals in the unit for skill teaching and research activities.

CONCLUSION

Students have no time to waste in sterile fact-finding exercises whose end product is simply an assignment to be handed in for marking. Research projects have the potential to motivate learning and to develop life-long independent learning skills. Let's realize that potential!

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by Jean Baptist,
Library Media Services Consultant

INDEPENDENT LEARNING SKILLS: SCOPE AND SEQUENCE

NOTE: All categories of skills apply to information in any media format:
- print
- audio (in-person presentation, tape)
- visual (maps, graphs, charts, photographs, cartoons, filmstrips, moving pictures, etc.)
- human resources
- community resources
- artifacts, realia
- actual events
- computer data bases, etc.

Locational Skills

	Introduce	Reinforce	Extend
1. Understand locational signs and labels.			
2. Understand and use alphabetical order of letters and words:			
2.1 Single letter			
2.2 Second letter			
2.3 Third letter and beyond			
2.4 Special rules			
3. Understand how material is arranged in a library.			
4. Use card catalogue (or computer data base) to locate material.			
5. Understand functions of parts of a book and use effectively:			
5.1 Title page			
5.2 Table of contents			
5.3 Index			
5.4 Glossary			
5.5 Preface, forward, introduction, afterward			
5.6 Footnotes			
5.7 Pagination			
5.8 Illustrations, graphs, charts, etc.			
5.9 Bibliographies			
5.10 Appendices			
6. Identify logical alternative headings when chosen subject heading is not in card catalogue, computer data base or index.			

Continued ...

Locational Skills, continued ....

	Introduce	Reinforce	Extend
7. Make efficient use of dictionaries:			
7.1 Abridged			
7.2 Unabridged			
7.3 Specialized			
7.3.1 Pictorial dictionaries			
7.3.2 Subject dictionaries - biographical, geographical, etc.			
7.3.3 Foreign language dictionaries			
7.3.4 Thesauri			
8. Make efficient use of encyclopedias:			
8.1 Guides on spine			
8.2 Guide words			
8.3 Indexes			
8.4 Cross references			
8.5 Key words			
8.6 Headings and sub-headings			
8.7 Subject encyclopedias			
8.7.1 Science			
8.7.2 Music			
etc.			
9. Make efficient use of ready reference sources:			
9.1 Atlases, maps, globes, gazeteers			
9.2 Almanacs, yearbooks, fact books			
9.3 Handbooks, manuals			
9.4 Field guides			
9.5 Government publications			
9.6 Statistical sources			
9.7 Other collective works			
9.7.1 Books of quotations			
9.7.2 Books of dates			
etc.			
9.8 Bibliographies			
9.9 Directories			
9.9.1 Telephone			
9.9.2 Postal code			
etc.			
9.10 Indexes:			
9.10.1 Periodical indexes:			
- Children's Magazine Guide			
- Abridged Readers' Guide			
- Readers' Guide			
- Canadian Periodical Index			
- National Geographic Index			

Continued ...

Locational Skills, continued ...

	Introduce	Reinforce	Extend
9.10.2 Indexes other than periodical indexes:			
- Short story			
- Plays			
- Biography			
etc.			
10. Make efficient use of periodicals most appropriate for a particular purpose.			
11. Make efficient use of newspapers.			
12. Make efficient use of pamphlet and picture files.			
13. Use following skills, as appropriate, to locate information efficiently:			
13.1 Scanning (dictionary, index, table of contents, visuals)			
13.2 Skimming (key words, phrases or passages, main idea, overview)			
14. Locate and use data through:			
14.1 Interviewing			
14.2 Observation and recording of objects, events			
14.3 Experimentation			
14.4 Utilizing audio-tapes, film, radio, T.V., etc.			
14.5 Utilizing artifacts, realia, museums, etc.			
15. Make efficient use of surveys and opinion polls			
16. Make efficient use of computer data banks.			
17. Make efficient use of flowcharts.			
18. Use sources of information external to school:			
17.1 Other libraries			
17.2 Museums			
17.3 Human resources			
17.4 Other community resources			
19. Select appropriate audio visual equipment and operate properly.			
20. Recognize organizational schemes, in addition to Dewey, for arranging resources e.g. Library of Congress.			

Continued ....

ANALYTICAL SKILLS

	Introduce	Reinforce	Extend
1. Analyze subject/topic/problem to establish focus for research:			
1.1 List basic information already known about the topic.			
1.2 Do background reading, if necessary, before generating questions.			
1.3 Brainstorm questions that could be researched.			
1.4 Group, classify, categorize questions.			
1.5 Select question or questions to research.			
2. Develop good research questions that:			
- address a problem or issue			
- probe			
- require the making of choices			
3. Decide nature/format of final product.			
4. Develop a step-by-step research plan.			
5. Choose resources most appropriate to research purpose.			
6. Use skill of skimming to preview material and analyze relationship of information to research purpose:			
6.1 Sub-headings			
6.2 Main idea			
6.3 Supporting details			
7. Judge value of materials:			
7.1 Accuracy			
7.2 Currency			
7.3 Scope			
7.4 Relevance			
7.5 Ease of use			
7.6 Documentation			
7.7 Author's credentials			

Continued ....

Analytical Skills, continued ...

	Introduce	Reinforce	Extend
8. Evaluate information			
8.1 Distinguish between fact and fiction			
8.2 Differentiate between relevant and irrelevant information			
8.3 Understand implied meanings			
8.4 Identify author's purpose and point of view			
8.5 Identify:			
- unsubstantiated statements			
- inconsistencies, errors, omissions			
- bias, stereotyping, assumptions			
8.6 Choose among competitive values			
8.7 Deal with conflicts of authority			
8.8 Recognize emotional appeal			

COMPREHENSION SKILLS

	Introduce	Reinforce	Extend
1. Understand glossary and dictionary definitions.			
2. Understand vocabulary and word meanings.			
3. Develop a skeleton outline.			
4. Use appropriate rate/type of reading for purpose:			
4.1 Skim			
4.2 Study - SQ3R (Survey, Questions, Read, Recite, Review)			
4.3 Critical			
5. Use critical thinking skills when reading, listening or viewing:			
5.1 Defining			
5.2 Observing			
5.3 Comparing			
5.4 Classifying			
5.5 Interpreting			
5.6 Noting relationships			
6. Use group discussion skills effectively:			
6.1 Task functions			
6.1.1 Initiating			
6.1.2 Information or opinion seeking			
6.1.3 Information or opinion giving			
6.1.4 Clarifying or elaborating			
6.1.5 Summarizing			
6.1.6 Consensus testing			
6.2 Maintenance functions			
6.2.1 Encouraging			
6.2.2 Expressing group feeling			
6.2.3 Harmonizing			
6.2.4 Compromising			
6.2.5 Gate-keeping			
6.2.6 Setting standards			

Continued ...

Comprehension Skills, continued

	Introduce	Reinforce	Extend
7. Record information in form appropriate to skill level:			
7.1 Illustration			
7.2 Word banks			
7.3 Oral paraphrase dictated to scribe			
7.4 Written paraphrase			
7.5 Written notes			
8. Keep a record of resources used, consistent with final bibliographic form.			
9. Organize information using appropriate pattern:			
9.1 Chronological, time			
9.2 Cause/effect			
9.3 Comparison/contrast			
9.4 Space, distance			
9.5 Logical sequence			
9.6 Relative importance			
9.7 Analagous relationship			
10. Evaluate information gathered to identify:			
10.1 If information is complete/sufficient			
10.2 How best to present information			
11. Reach tentative conclusions based on information:			
11.1 Draw inferences			
11.2 Make generalizations			
11.3 State hypothesis			
11.4 Offer opinions with reasons			
11.5 Make judgments with criteria			
11.6 Summarize basic principles/concepts			
12. Evaluate conclusions and change if errors in logic or new information indicate need.			
13. Revise original outline, or questions, as required.			

RECORDING, REPORTING AND DEMONSTRATION SKILLS

	Introduce	Reinforce	Extend
1. Use a reporting format that is appropriate for the message. Possibilities include:			
1.1 Oral			
___ oral			
___ oral presentation with visuals			
___ seminar (presentation, questions and answers)			
___ panel discussion			
___ debate			
___ demonstration			
___ dramatization (play, skit, puppet play, interview)			
1.2 Written			
___ written report (sentence(s), paragraph(s))			
___ illustrated book (group, individual)			
___ essay			
___ research paper			
___ precis/abstract			
1.3 Audio-Visual			
___ pictorial representation (poster, mobile, mural, bulletin board)			
___ overhead transparencies			
___ photographic representation			
___ slide production			
___ filmstrip			
___ graphs/charts			
___ audio tape			
___ slide/tape production			
___ video tape			
___ model/diorama			
___ game (board or computer)			
2. Prepare first draft (in format appropriate to method of presentation.			
3. Edit and revise first draft.			
4. Use quotations, as appropriate.			

Continued ...

Recording, Reporting, Demonstration Skills, continued ...

	Introduce	Reinforce	Extend
5. Use footnotes appropriately.			
6. Revise to produce final draft.			
7. Edit material in final presentation format.			
8. Produce related materials appropriate to method of presentation.			
9. Prepare bibliography of resources used:			
9.1 Preliminary form: author/title			
9.2 Basic form: Call number/author/title/copyright date			
9.3 Standard citation format (for all media formats including mixed media)			
9.4 Annotations			
10. Use effective presentation techniques, as appropriate to selected mode of presentation.			
11. Show evidence of originality in			
11.1 Conclusions drawn			
11.2 Presentation of information			
12. Apply new concept(s) learned to other situations and/or recognize areas for future study.			
13. Participate in evaluation of process and product:			
13.1 Evaluate own performance/product			
13.2 Evaluate work of others, using constructive criticism, as appropriate			
13.3 Evaluate group interaction			
13.3.1 Task functions			
13.3.2 Maintenance functions			